[article review] 'Analyzing safety behaviors of temporary construction workers using structural equation modelling'

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The construction industry in Korea reports the highest frequency of industrial accidents, mostly among temporary workers. Domestic and international disaster-related reports indicate that temporary workers have high risk associated with working environments as a major cause of accidents. The authors, all from the Hanyang University, analysed the relationships between the individual and organisational factors that affect temporary workers’ safety behaviours using the structural equation modelling (SEM) to estimate simultaneously the cause-and-effect relationships between many independent variables and dependent variables. Based on a survey among temporary construction workers, the following results were obtained: First, personal characteristics had a partial effect on job stress and a direct effect on safety culture. Second, personal characteristics and job stress had a direct effect on self-perceived fatigue. Third, personal characteristics and safety culture had a direct effect on safety climate, and personal characteristics had an indirect effect. Finally, personal characteristics had no direct effect on safety behaviour, but did have indirect effects. Job stress had both a direct and indirect effect. Safety culture had no direct effect, but did have an indirect effect. In addition, safety climate had a significant direct effect.

The authors conclude that preventing construction disasters can be achieved via analysis of safety behaviour factors. Their study provides theoretical foundations for integrated relevance of both direct and indirect effects of variables via structural models on safety behaviour of temporary construction workers. The study reveals that organisational factors and individual factors such as personal characteristics, job stress, and self-perceived fatigue affect safety behaviour in a statistically meaningful manner. The authors believe that,
Reviews

since this study targeted unspecified temporary construction workers throughout Korea, generalisation from this population is limited in creating safety behaviour models for other construction occupational classifications. Nevertheless, the conclusion that a (good or bad) safety climate has a significant direct effect is clearly in line with findings in other studies.